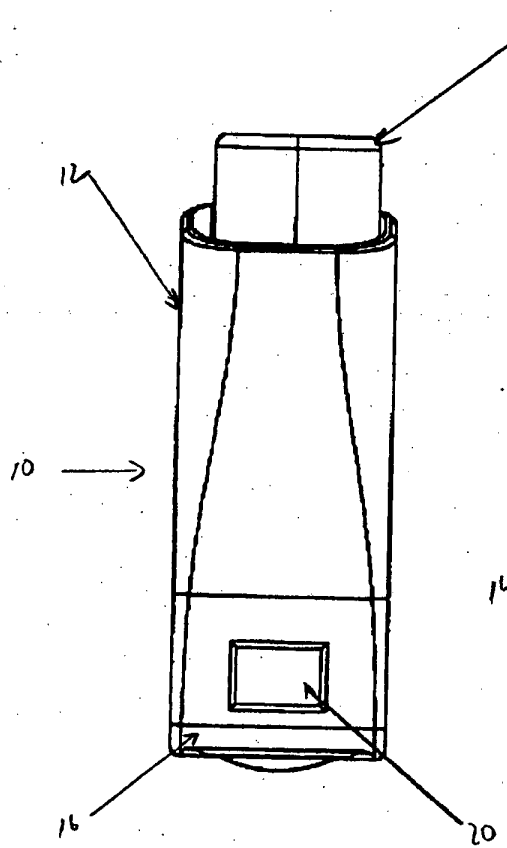


Fig 3

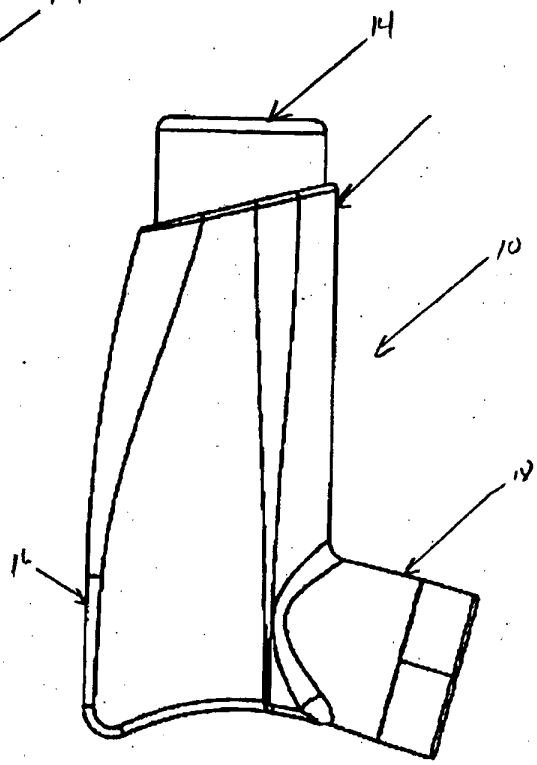


Fig 1

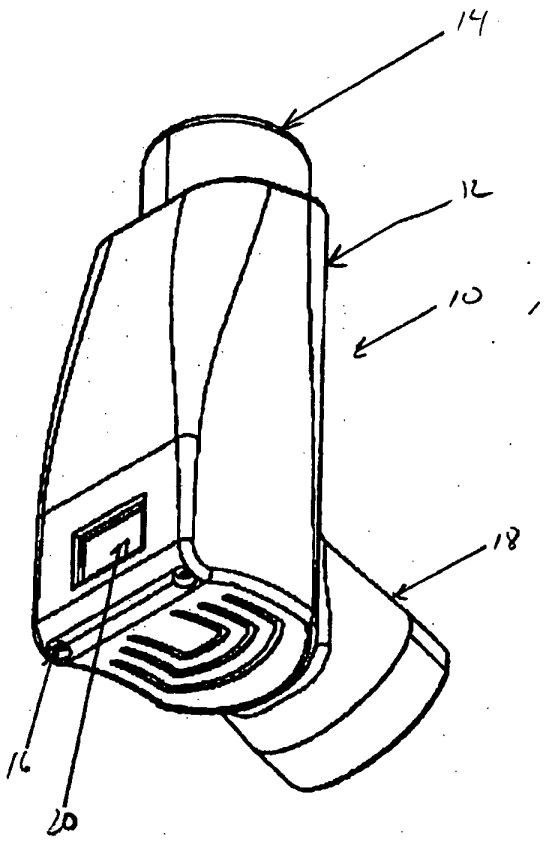


Fig 2

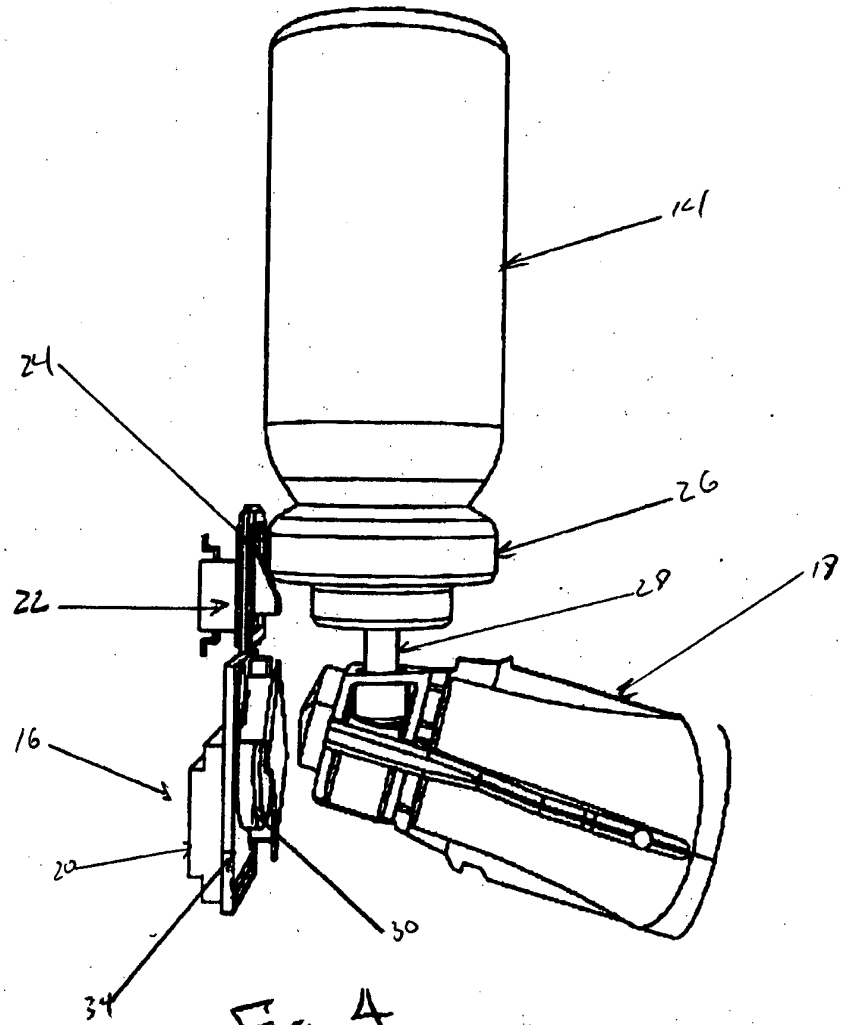


Fig 4

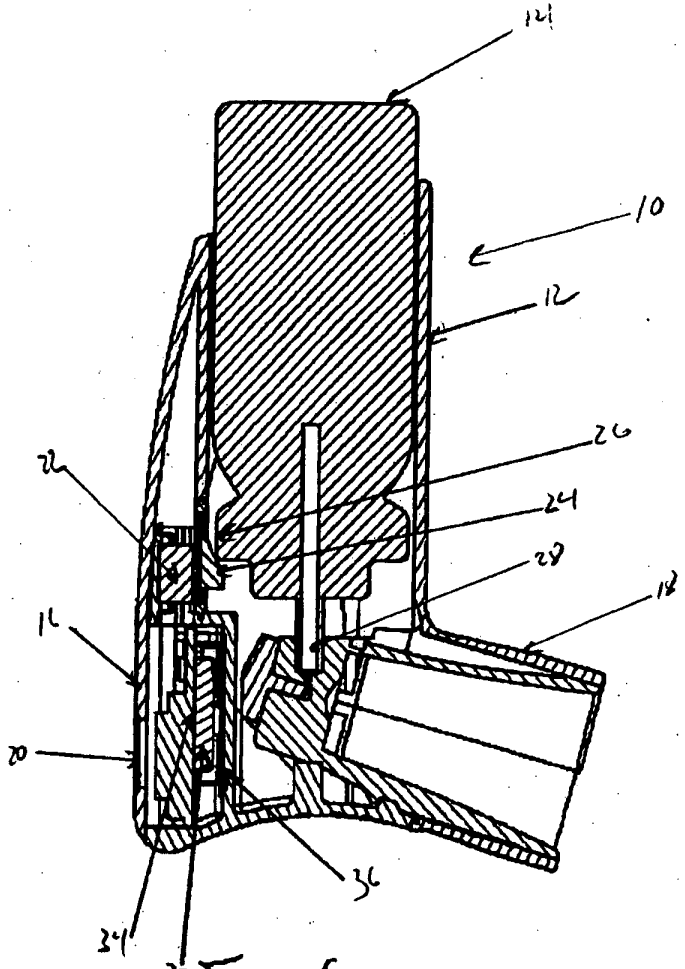


Fig 6

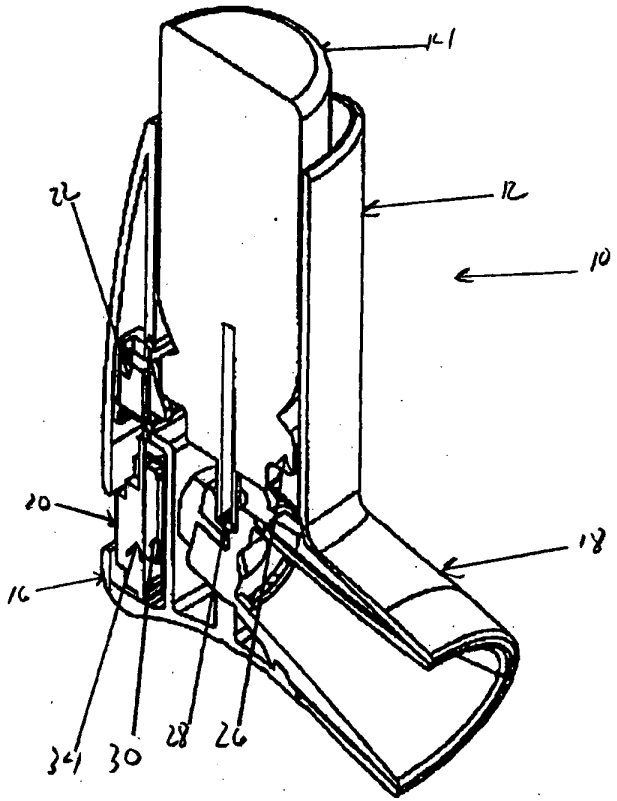


Fig 5

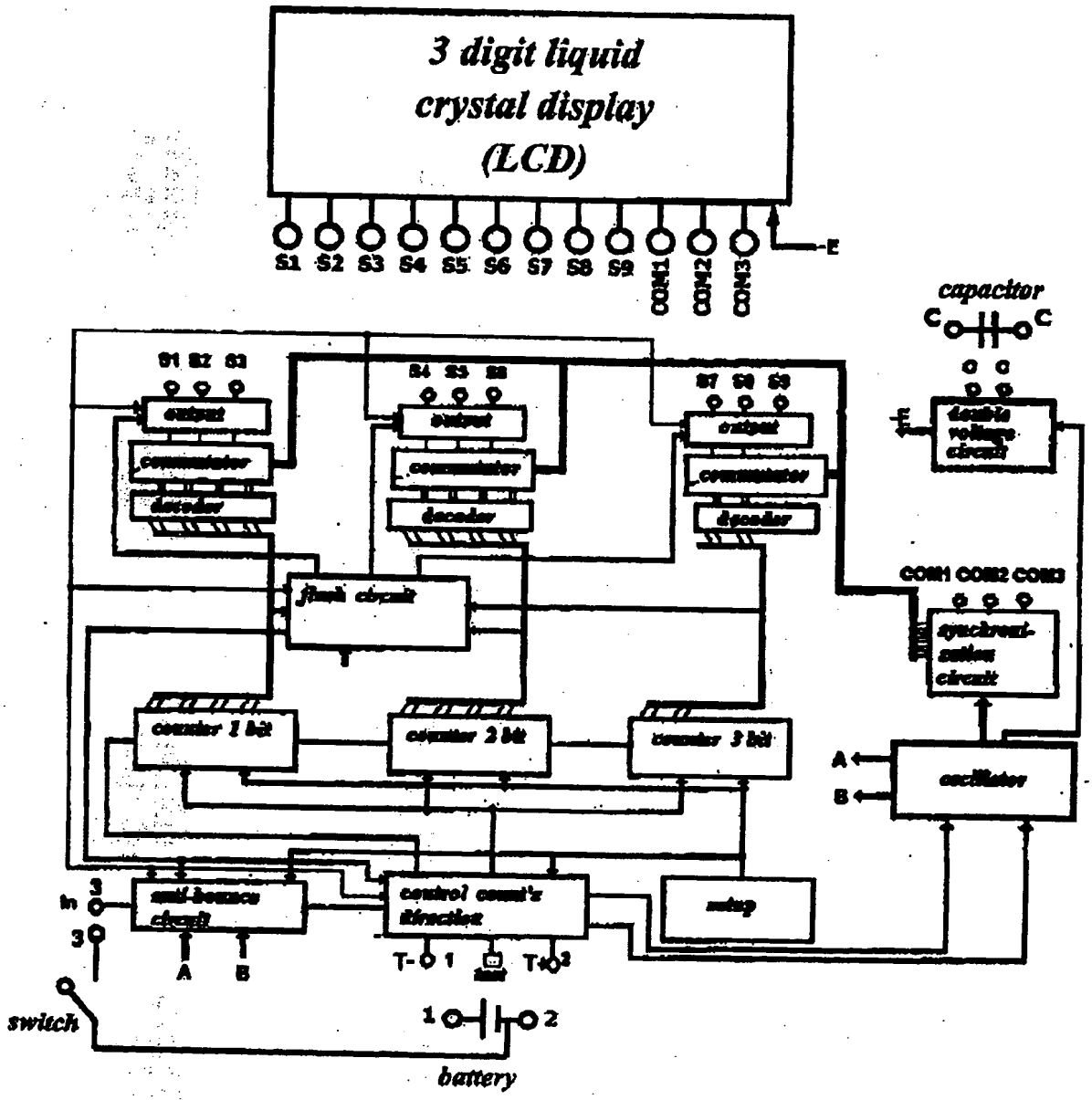

3 digit liquid crystal display (LCD)
S1 S2 S3 S4 S5 S6 S7 S8 S9 COM1 COM2 COM3 E
capacitor
C C
S1 S2 S3
S4 S5 S6
S7 S8 S9
output
commutator
decoder
flash circuit
double voltage circuit
COM1 COM2 COM3
synchronization circuit
counter 1 bit
counter 2 bit
counter 3 bit
oscillator
A
B
In 3
3
anti-bounce circuit
control comut's direction
setup
T- 1
T+ 2
switch
1 2
battery

Fig 7

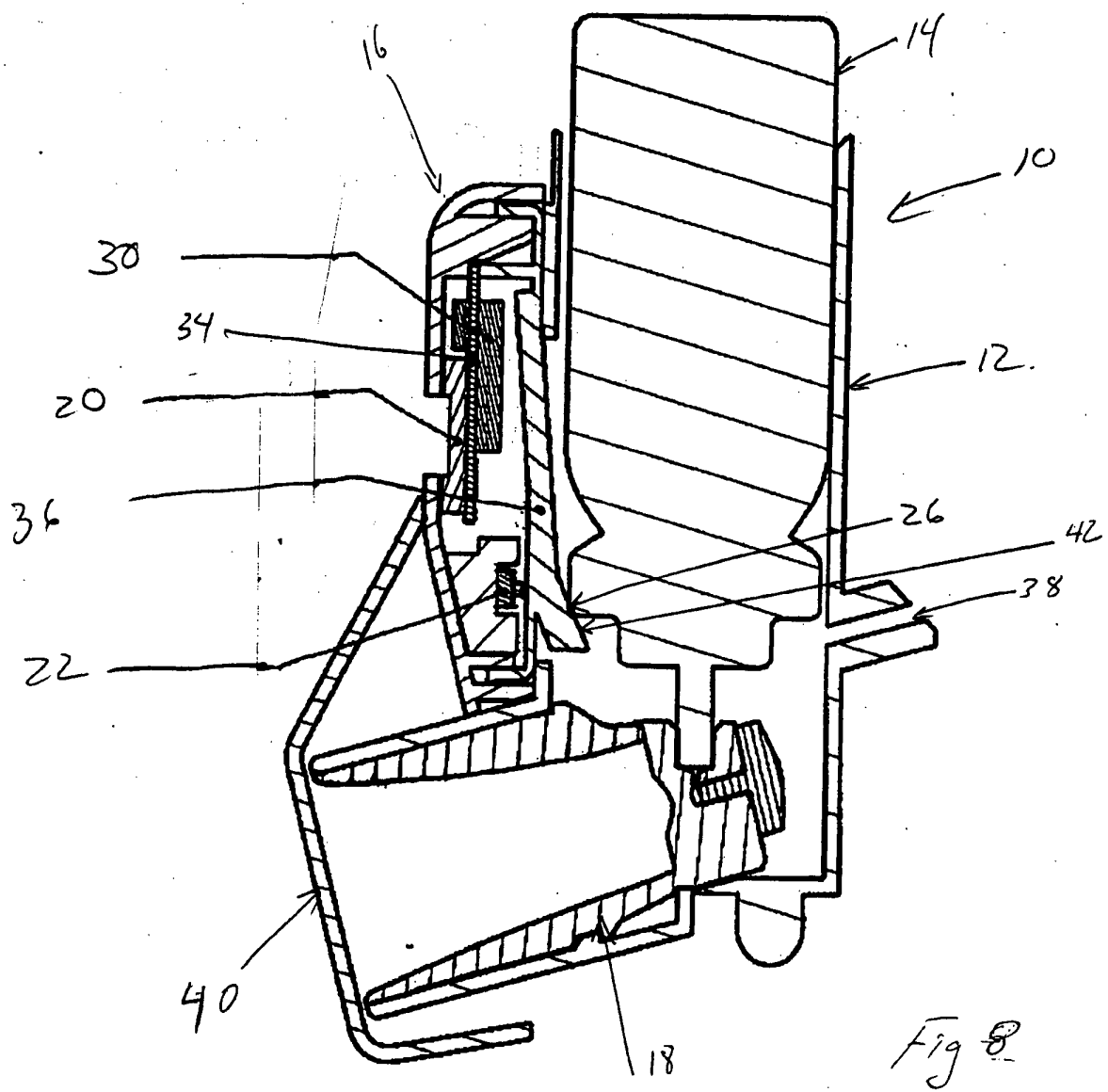


Fig 8

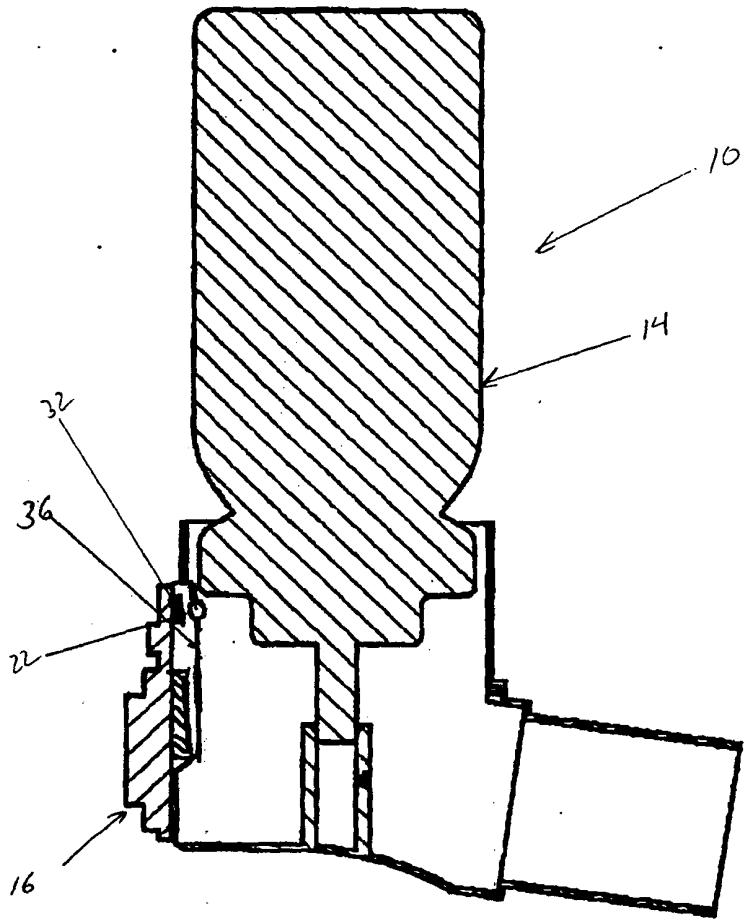


Fig 9

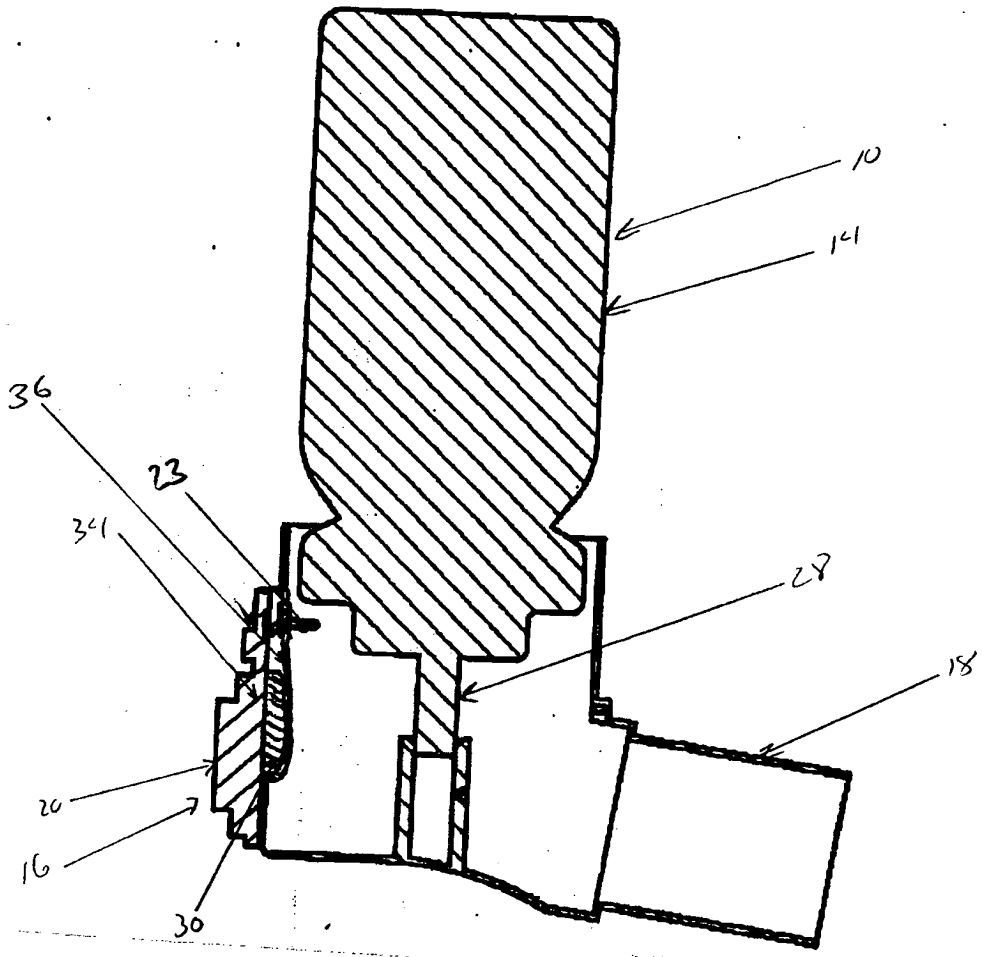


Fig 10

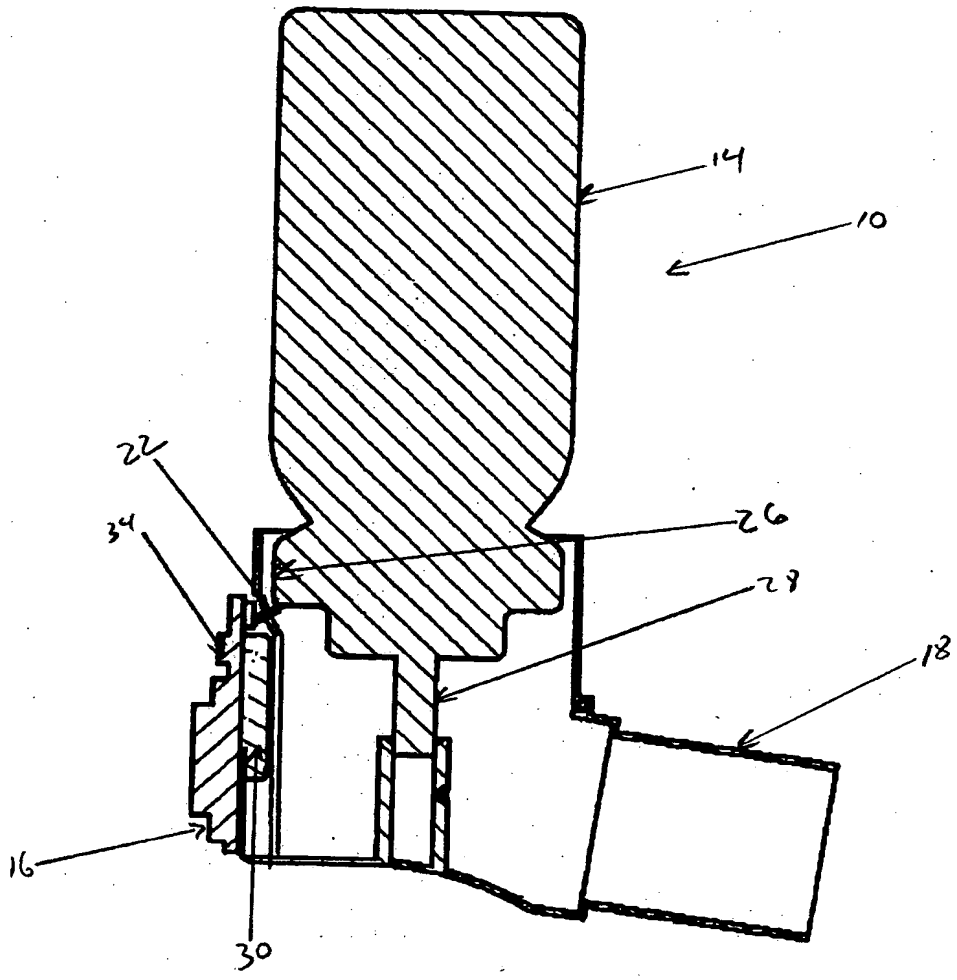


Fig 11

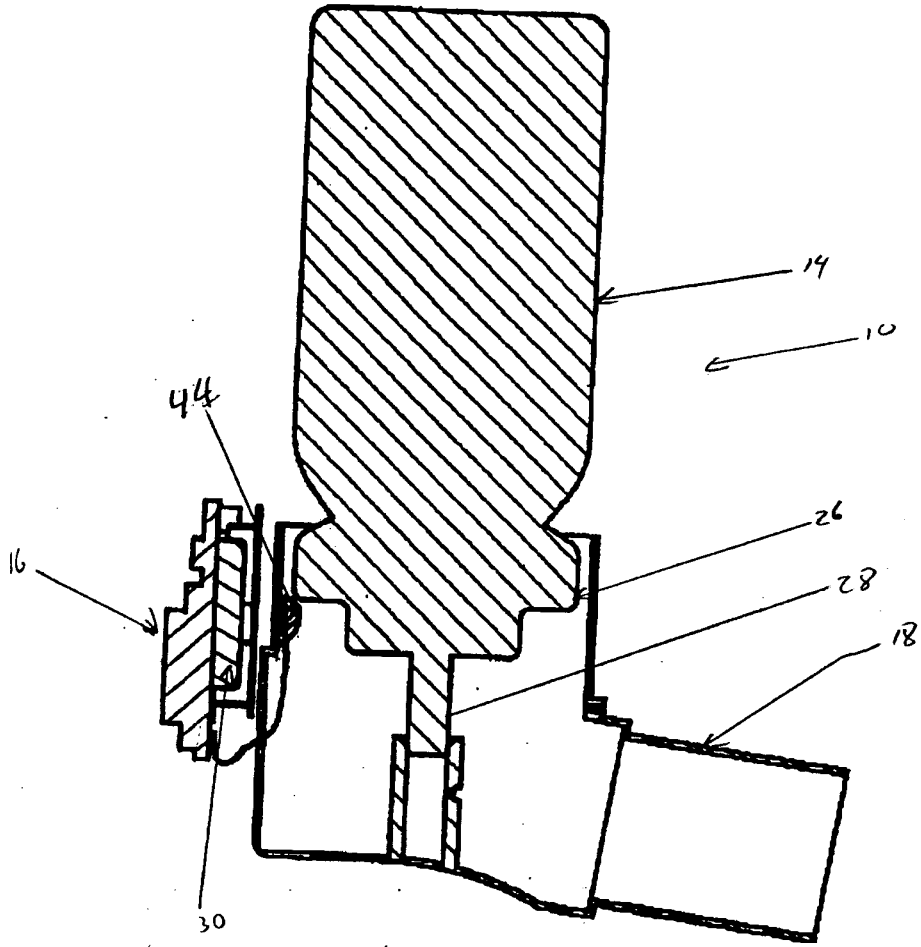


Fig 12

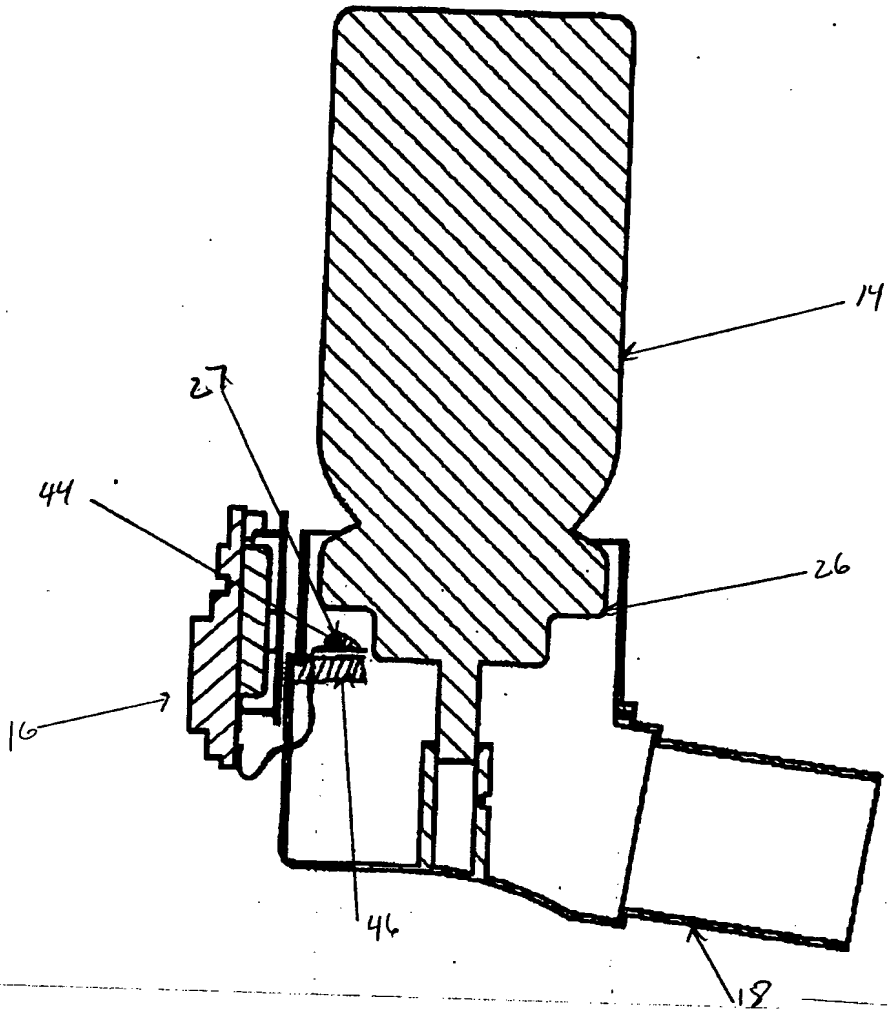


Fig 13

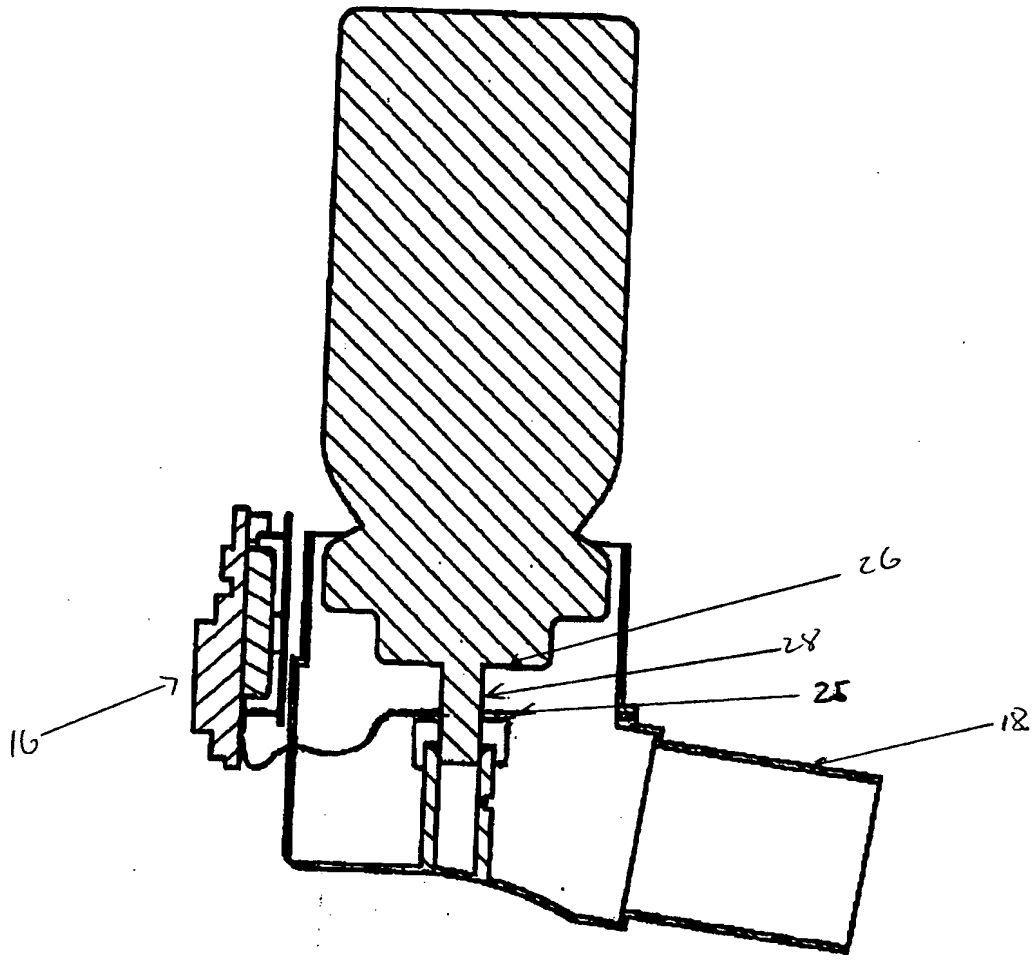


Fig 14

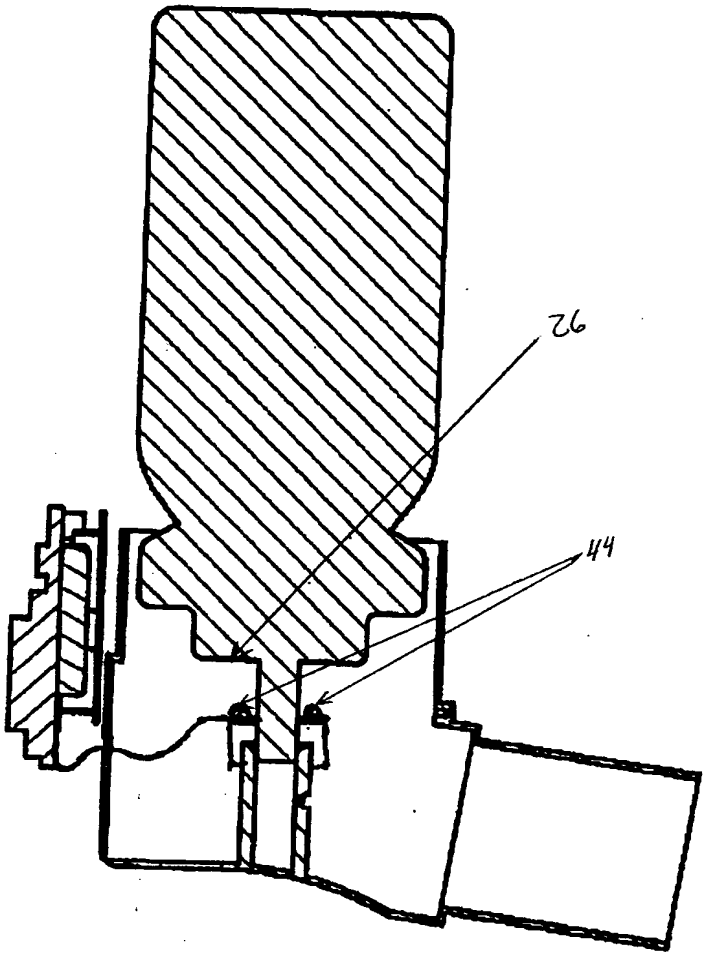


Fig 15

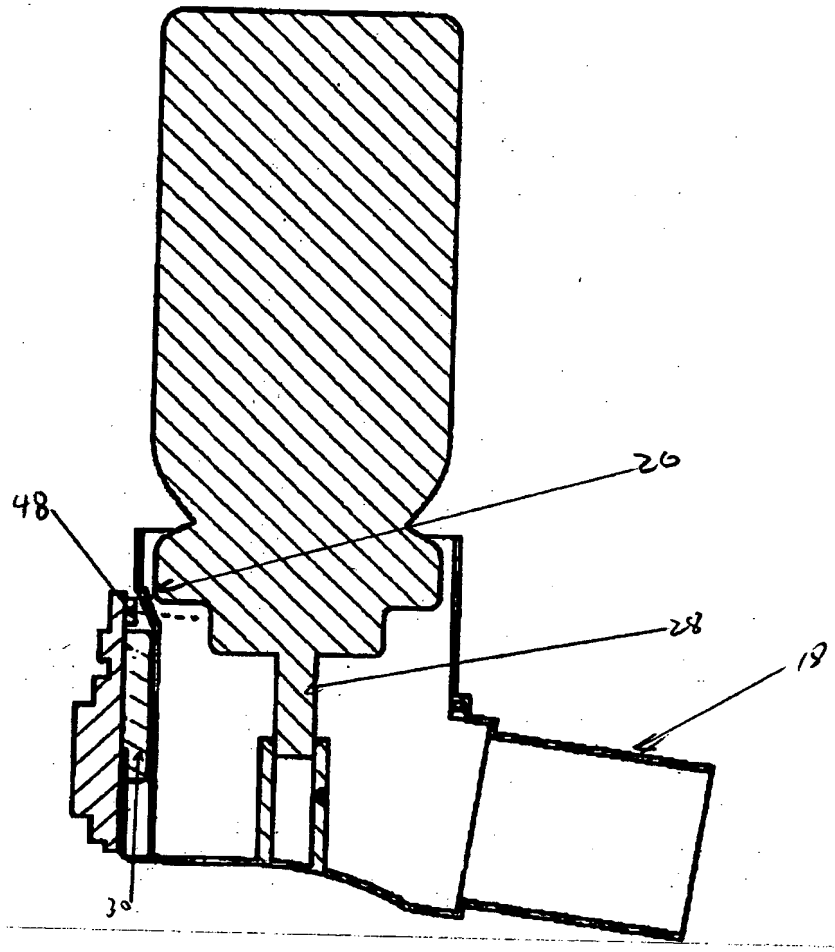


Fig 16

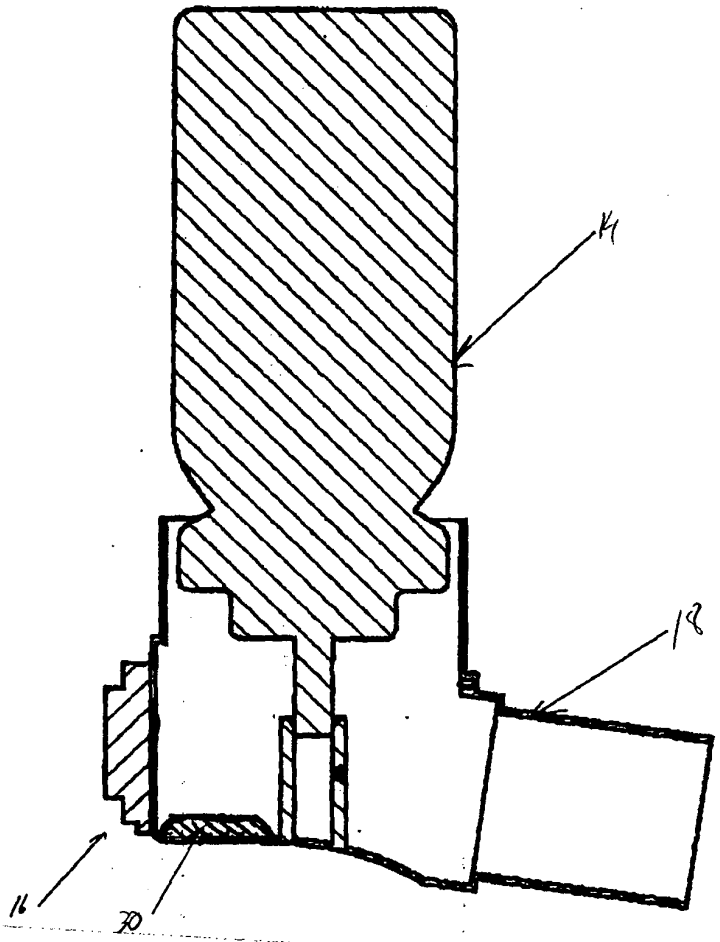


Fig 17

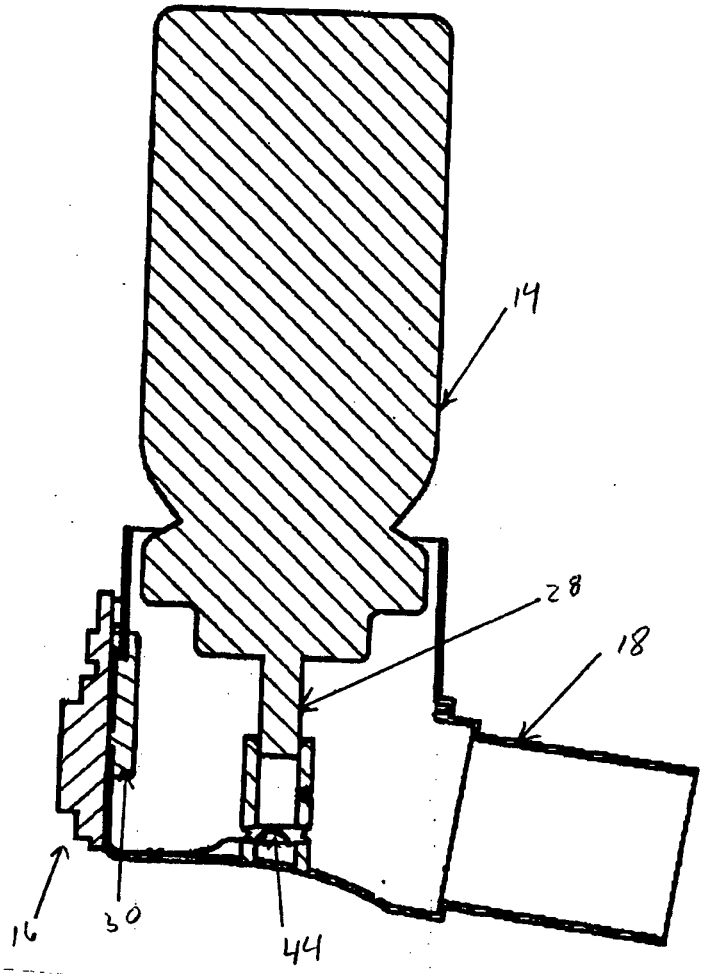


Fig 18

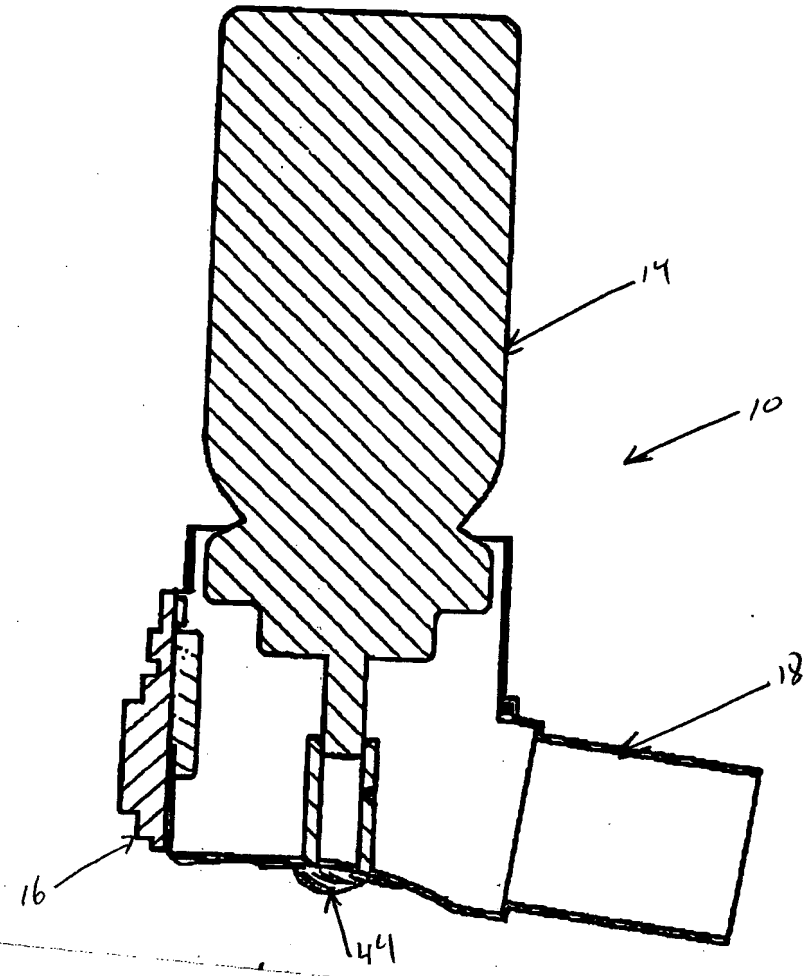


Fig 19

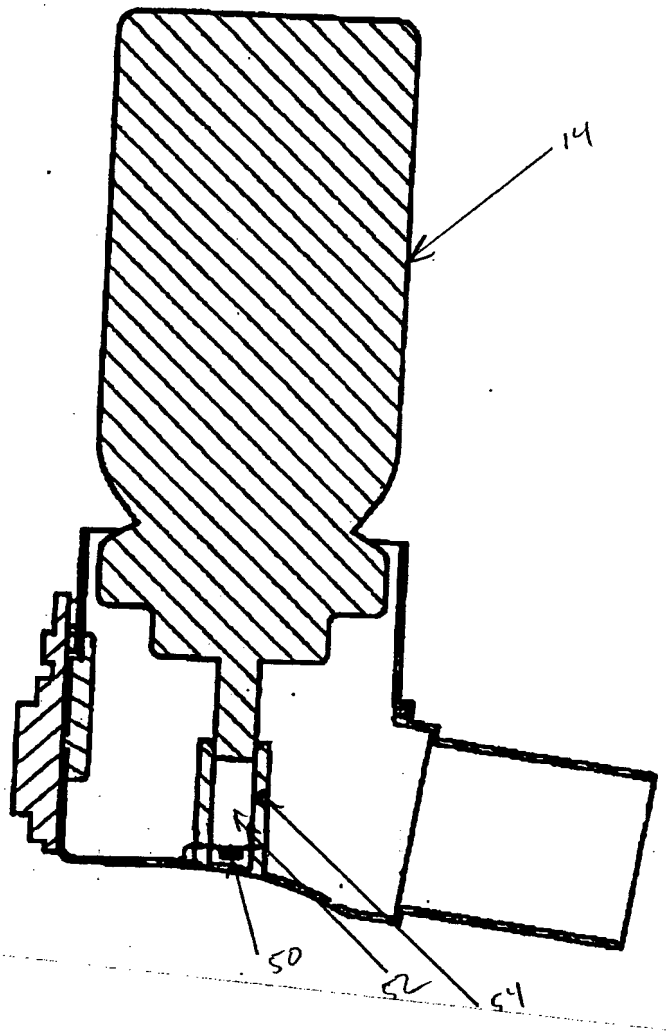
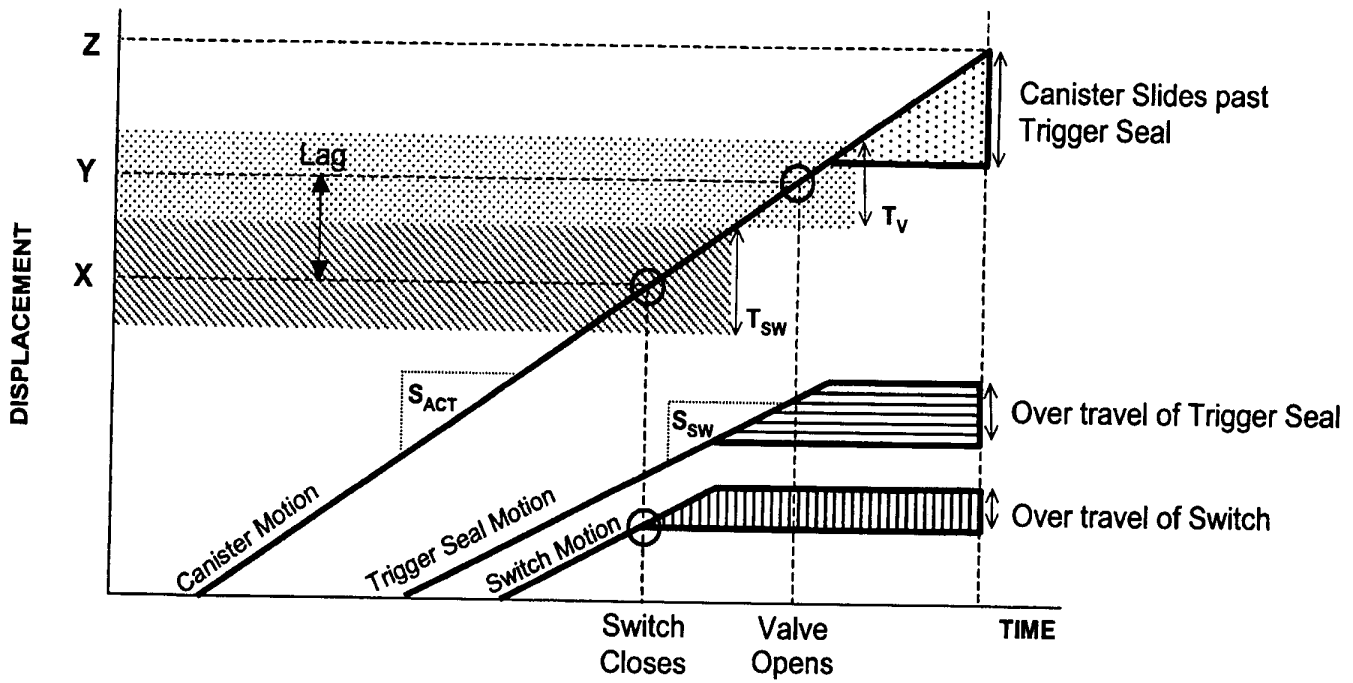


Fig 20



X = Point at which switch closes in electronic counter circuit

Y = Point at which valve opens and medicament begins to dispense

Z = Total canister travel

T_V= Tolerance of valve actuation

T_{SW}= Tolerance of trigger seal and switch assembly

LAG = Difference between switch closure and valve opening – aim to reliably minimize

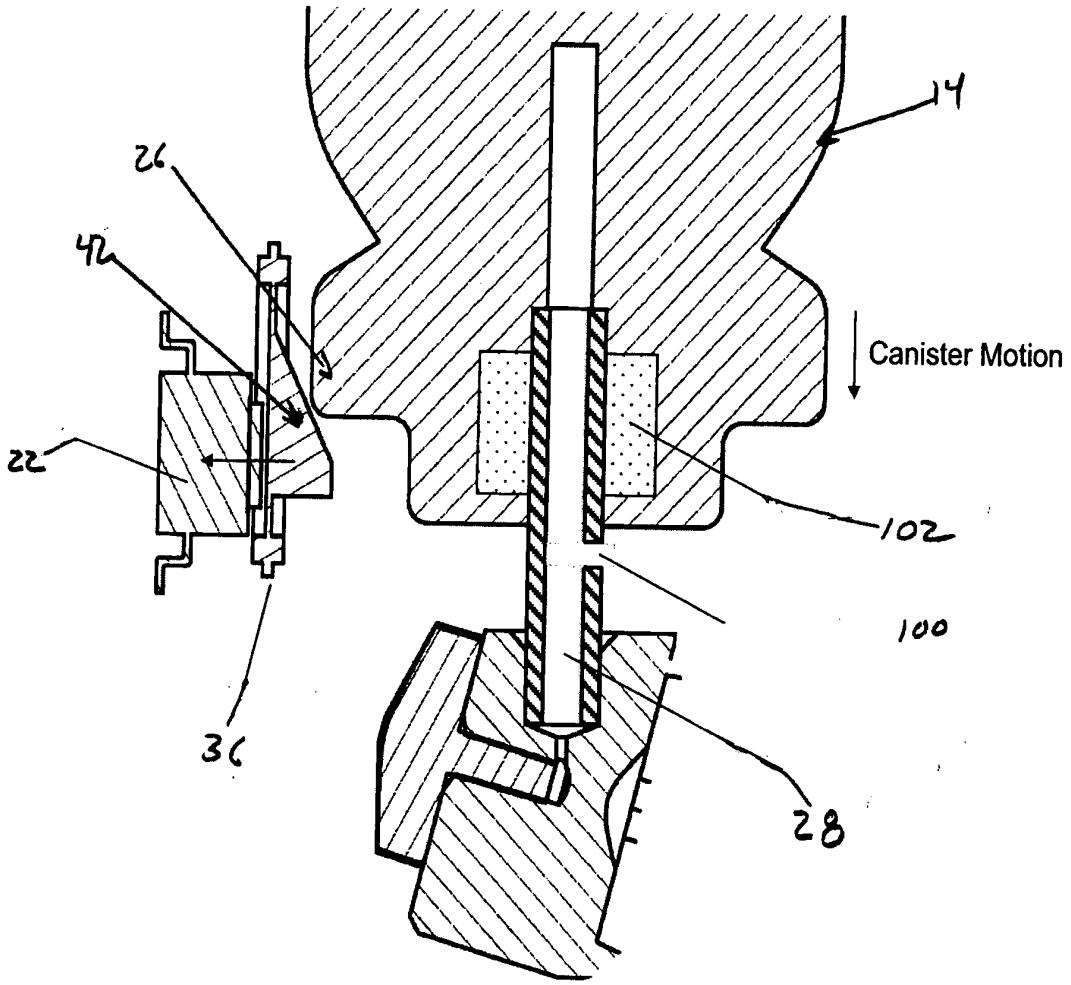
$= ½ (T_V + T_{SW})$

S_{ACT} = Slope or dynamic profile of actuation motion

S_{SW} = Slope or dynamic profile of trigger seal and switch motion

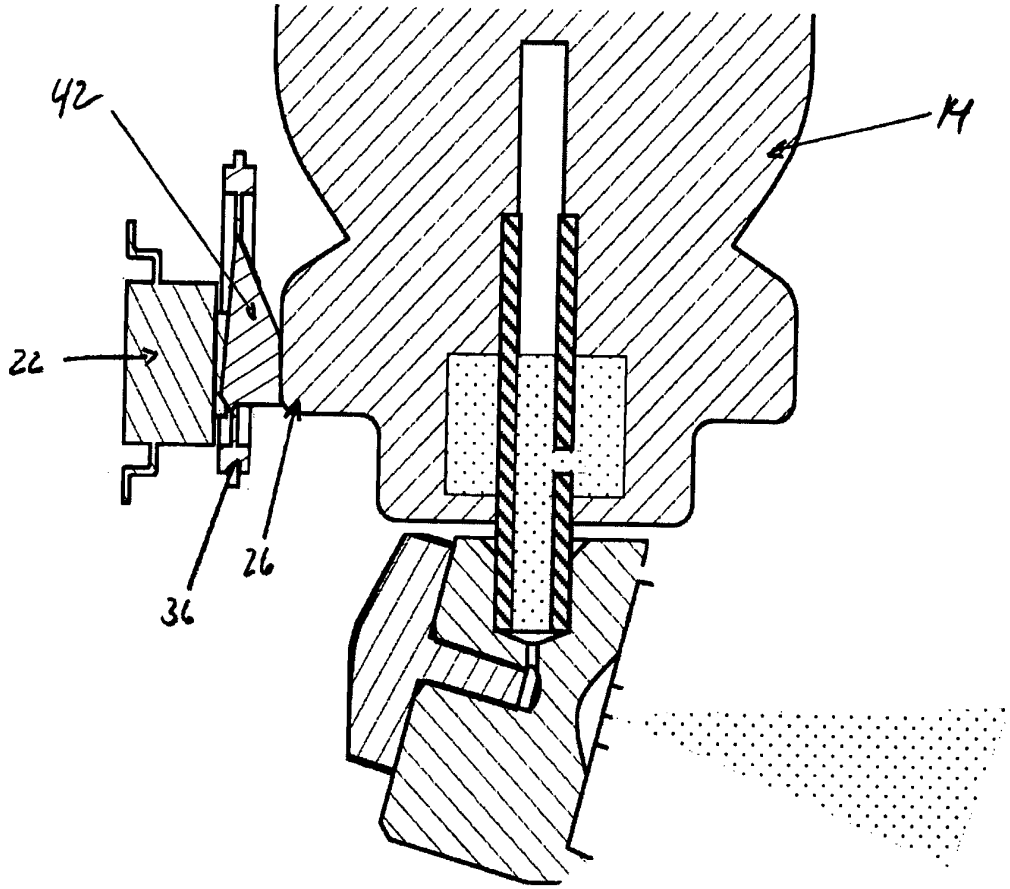
Fig 21

Fig 22a



Valve Closed (Switch Open)

Fig 22b



Valve Open (Switch Closed)

Membrane Switch

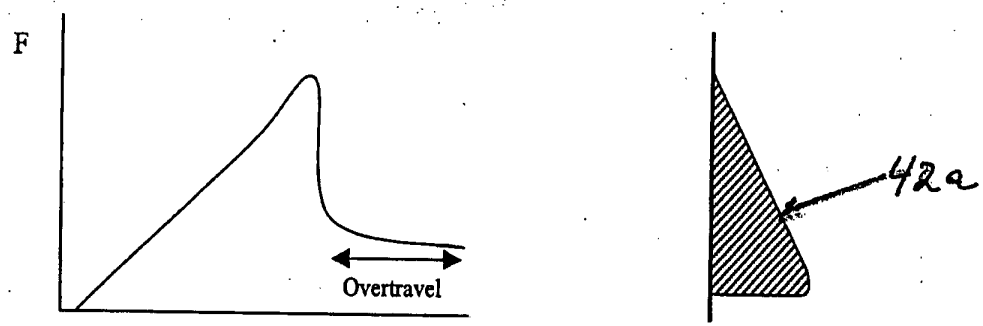


Fig 23a

Contact Switch

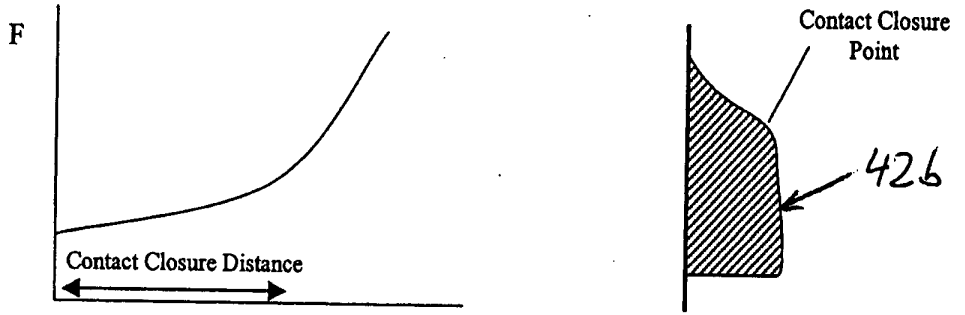


Fig 23b

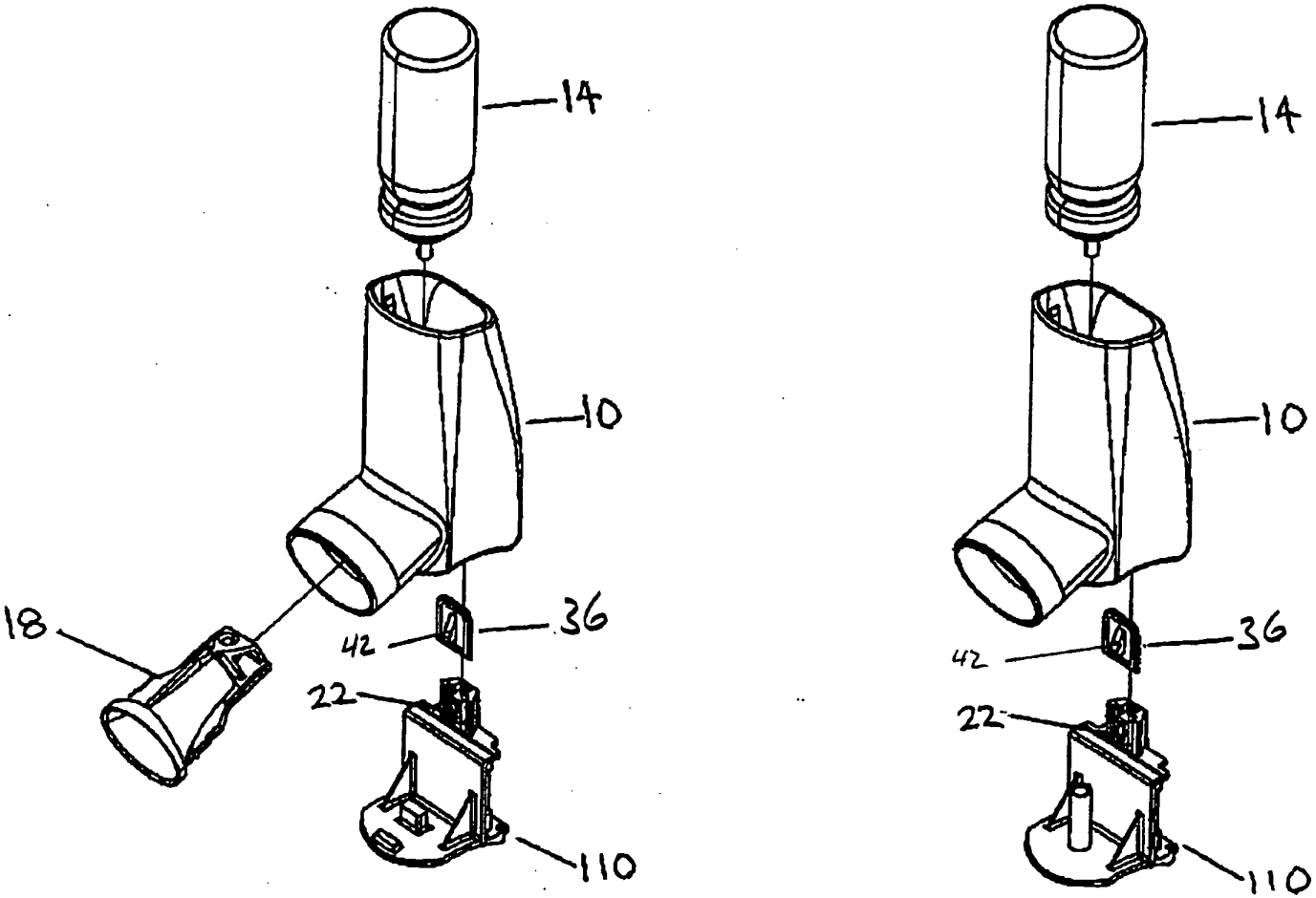


Fig 24a

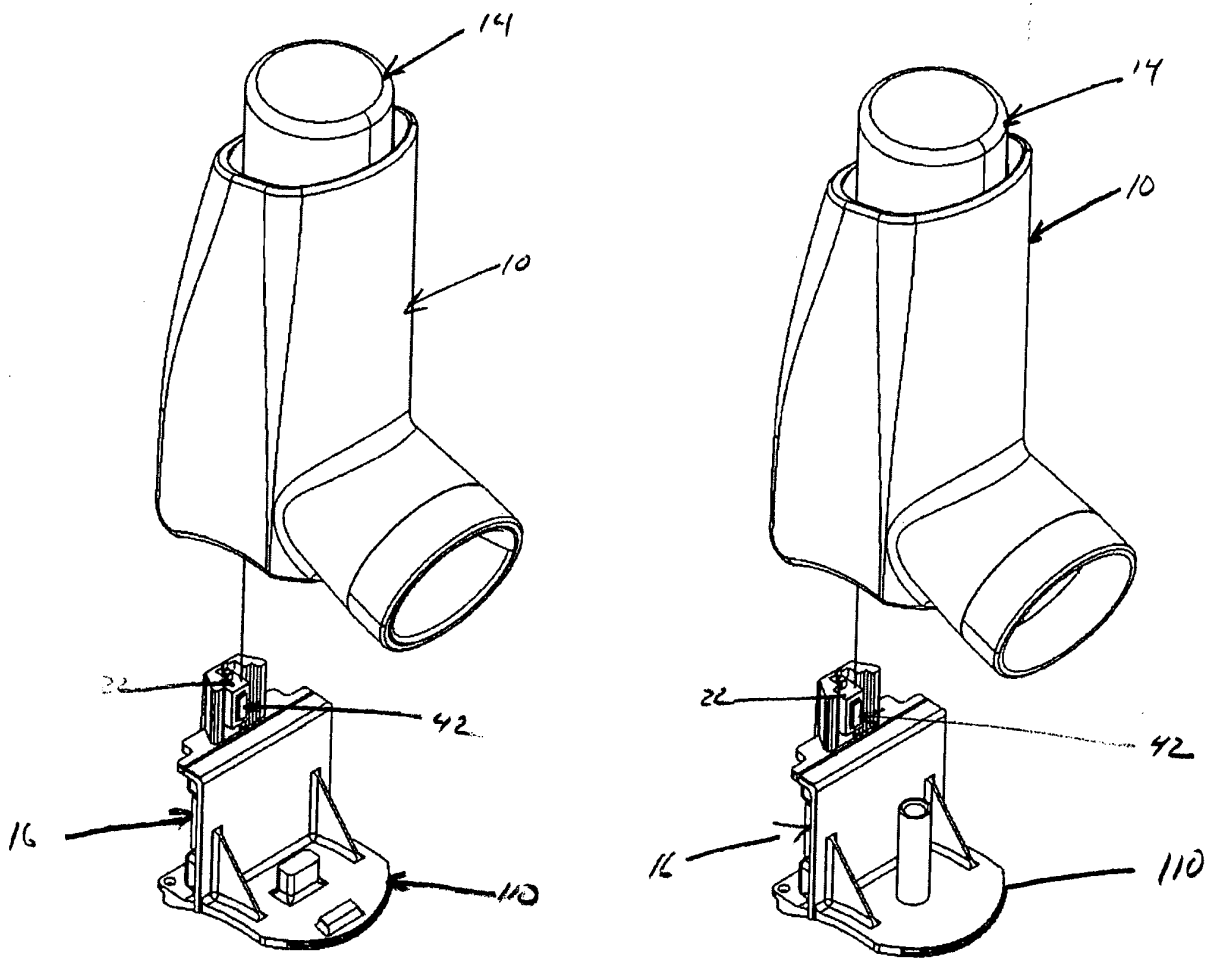


Fig 24b

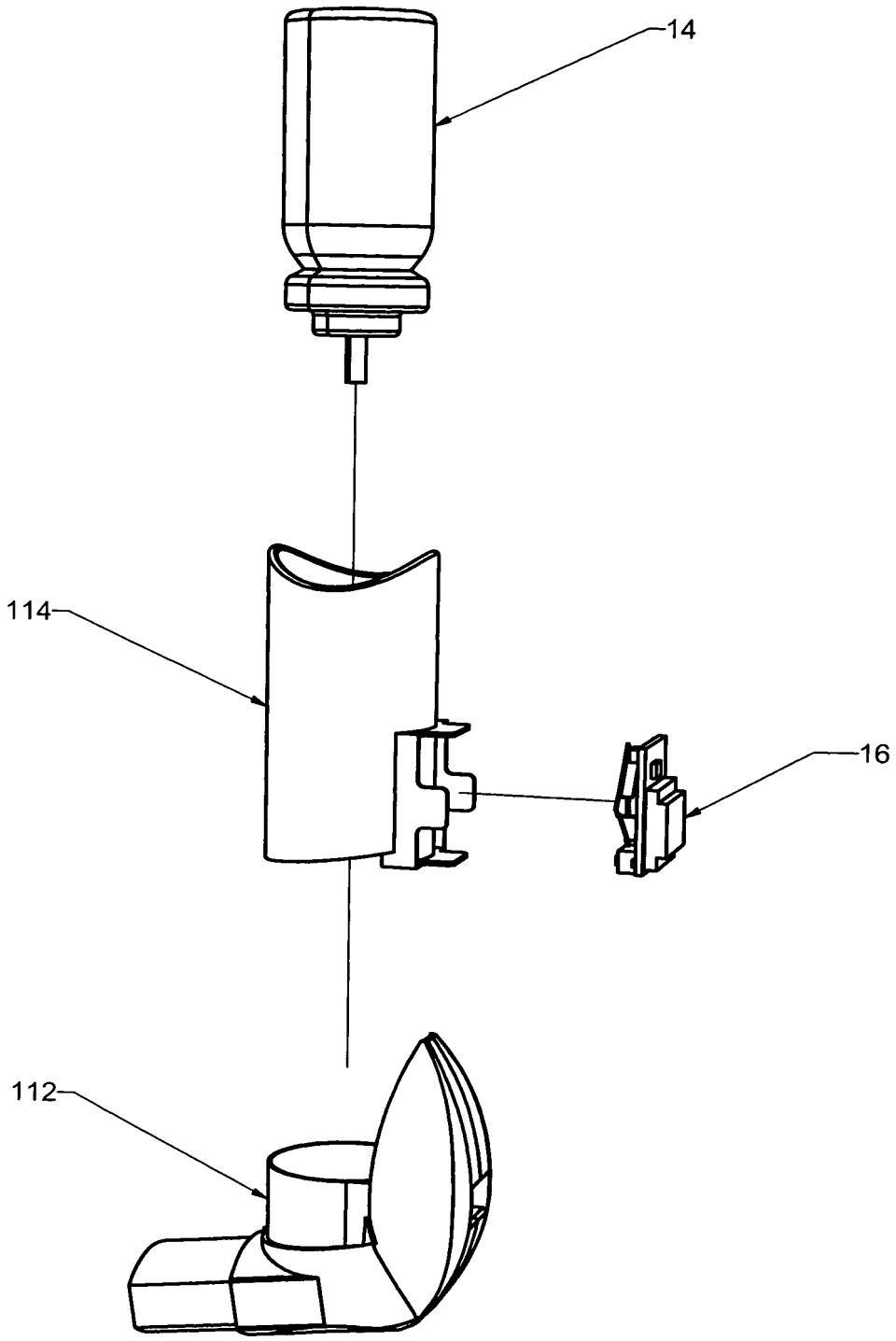


Fig. 25